FAMOUS DISCOVERY. The Mathematical Triumph of Le Verries and Adams. Who Calculated Exactly the Place Where the Then Unknown Planet Could Be Found with a Telescope.

BY SIR ROBERT . BALL. In the course of the present year we have to celebrate the fiftieth anniversary of one of the most famous astronomical discoveries of modern times; indeed, it may truly be said, of one of the most famous discoveries ever made in the whole annals of astronomy. There is no chapter in the history of science which contains incidents of a more dramatic character an those which are described in the narrative of the discovery of the planet Neptune. Nur are other associations wanting to lend additional attraction to this splendid achieve ment. The human element, without which no story could be completely interesting, is here also present, and a memorable controversy, the smouldering embers of which still occa-sionally burst into flame, has arisen with respect to the discoverer of the remotest planet in our system. At the present time, when the lapse of just half a century has again stimulated a general interest in the subject, there seems to be a special propriety in attempting once more to draw attention to the series of never-to-be forgotten favestigations which

brought Neptune into light.

To tell the story from the beginning, it is necessary to commence with the latter part of the last century, when those who loved to bear about the stars were astonished by the announcement of the first discovery of a planet which had ever been made since the time when history commenced. The older planets, Jupiter, Saturn, Mercury, Venus, and Mars, had been known to observers of the heavens prior to the very earliest ages of which we have any record. No fresh additions had been made to the slender list of five until William Herschel, then organist at the Octagon chapel at Bath, suddenly sprang into fame by the announcement that with a home-made telescope, on the night of the 13th of March, 1781, he had discovered the vast orb which presently received the name of Uranus.

Herschel was led to this discovery by having

imposed upon himself the task of examining all the stars he could find whose magnitude exceeded a certain limit. In the fulfilment of this scheme he happened on the night in question to be reviewing the various stars in the constellation of Gemini, when his penetrating glance was attracted by an object which seemed different from the ordinary stars which are strewn in such thousands over the sky. Closer inspection revealed that this object was a planet. Hence came the announcement of the superb discovery of a mighty orb which revolved far outside the orbit of Saturn. An immense enlargement was thus given to the dimensions of the planetary system as they had been previously understood. When Herschel had directed attention to

this new object Uranus, it was naturally submitted to careful observation by astronomers all over the world. They were auxious to learn all that they could with reference to the nature and the movements of this newly added member of our solar system. It was presently found that the planet required a period of about eighty-one years for the accomplishment of a complete revolution around the run. As the years passed by, observations were accumulated showing the several points which the planet occupied in the different stages of its circuit. More and more accuracy was thus infused into our knowledge of the various circumstances of the motion of Uranus. At last astronomers were able to follow with all needful precision the mighty highway which the great planet pursued as it traced out what was then supposed to constitute the frontier of the solar system. It was found that, like the orbits of all the other great planets, the highway of Uranus was not exactly a circle; it was, in fact, an oval, or as we should say more accurately, an ellipse, and the details of the size and position of this ellipse were carefully studied and became exactly known.

As soon as the track of Uranus through the heavens had become determined, it was possible to find with some approximation the position which the planet occupied at any par-ticular date, even though that date were antecedent to its discovery. In fact, a time table was formed from which the locality of the planet, not only for each year, but even for each day, could be ascertained for any past epoch, extending, if necessary, to centuries before Herschel lived. It happens, singularly enough, that a planet of the size of Uranus, and situated at its distance from the earth. bears a striking resemblance, though of a very superficial kind, to an orginary planet is indeed very liable to be mistaken for a star, and as the history of Uranus was studfed it came to the knowledge of astronomers that though this object had never been recognized as a planet before the eagle glance of Herschel first detected it, yet that it had in a certain sense often come under the observa-tion of preceding observers. Nor is this fact to be wondered at when we reflect that Uranus is bright enough to be visible with the most moderate telescopic power. Those earlier astronomers, who, in the course of reconnoitering the heavens, happened to light on Uranus, not unnaturally took for granted that it was a fixed star; it never occurred to them that it was anything essentially different from one of the thousands of similar looking objects lying all around. They never imagined that it called for any further recognition than was implied by noting its magnitude and the exact position which it occupied in the sky. These early observations in which the planet was mistaken for a star, and had its places recorded in catalogues with thousands of undoubted stars, have since proved to be of signal service in connection with the immortal discovery which we are presently to set forth. Little could any one of those ancient astronomers have suspected that while his attention was fixed on a supposed star whose place he was so carefully tronomers, who, in the course of reconneiter-

since proceed to set forth. Little could any one of those ancient astronomers have suspected that while his attention was fixed on a supposed that while his attention was fixed on a supposed star whose place he was so carefully measuring, he was just on the very brink of a discovery which would have rendered his name famous throughout the ages.

The records which these astronomers have left possess, however, great importance for our present turpose, because we are able by their aid to learn the track along which the planet was moving during the century which presented its discovery. Thus the study of these early investigations permits us to learn the exact position occupied by Uranus years before attention had been directed to it by the achievement of Herschel.

If a planet were permitted to pursue its movements without interference of any external forces, so that it was guided solely by the supreme central attraction of the sun, then the orbit of the planet would be invariable. Fach revolution would be performed along he same ellipse precisely as that which was inversed during the preceding revolution. When the highway which Uranus was following at the time of its discovery and for years subsequent thereto was compared with the track which the same planet was pursuing in those earlier years before Herschel's time, when it was unwittingly observed by preceding astronomers, it was found that the two tracks did not agree. No doubt the differences were not read by the contract of the planet was found by the early observers and the positions which calculations based on the latter observations would have assigned to the planet. But they were quite large enough to be unmistakable when we remember how acturately the, determinations of positions can be effected in our observatories. It was therefore clear that there mays be some other influence upon the planet Uranus besides that which was due to the supreme controlling attaction of the sun. Astronomers had been long accustomed to find that the movements of the planets

regularity in the movement of Jupiter which was most antisfactorily explained to be a consequence of the attraction of the planet Saturn, and a corresponding irregularity in the movement of Saturn was satisfactorily attributed to the disturbing effect of Jupiter.

When it appeared that Uranus was performing movements which indicated that the planet was affected by certain perturbations, attempts were naturally made to account for those perturbations by showing that they were the consequences of the attractive power of the other bodies in the solar system. The effects which Jupiter could produce upon Uranus admitted of being estimated, and so also the disturbing influence of Saturn as well as of the other planets could be ascertained.

After due allowance had been made for all known source of disturbance, it was, however, found that there were still certain discrepancies outstanding between the places actually occupied by the planet discovered by Herschel and the places in which calculation seemed to locate it. The belief in the universal validity of the laws of gravitation is so well founded that it suggested the possibility that the perturbations of Uranus, which could not be otherwise accounted for, must be due to the attraction of some other planet which was quite unknown to astronomers. This gave rise to one of the grandest intellectual problems which the mind of man has ever solved.

Let it be observed that the facts with which astronomers had to deal in their queet for the unknown planet were simply these. The position in which Uranus was actually found differed from the positions which that planet would have held had there been no other ascents acting upon it except those which are already known. Accordingly two mathematicians, Urbain J. Le Verrier in France and John Couch Adams in Envland, undertook to investigation which had actually been observed. It need hardly be said that the solution of this question involved refinements of mathematical research which had to the reproduced. I may, however, indicat

Mound produce upon Cramas.

It could hardly be expected that a first attempt of this kind would provide a satisfactory explanation of the irregularities in the motion of Herschel's planet, but by making successive trials in which the unknown planet was placed at different diviances from the sun, and assumed to have different magnitudes. But the illustrious astronomers and the light the illustrious astronomers and the conclusion that it was quite possible to determine the whereabysits of the unknown planet from the study of its action reflected, so to speak, in the movements of Uranus, Indeed, it is a most remarkable circumstance that the two investigators should have concurred not only in determining the track of the unknown planet, but even in ascertaining known object occupied. When Adams and Le Ver ler found that this hypothetical body did exercise precisely that gind and degree of attractive power upon Uranus which would provide the necessary explanation of its perturbations, their confidence that the hypothetical body must have a veritable extaetence to absolute certainty.

Le Verrier's calculations having byen completed, he not only ascertained the track in which the lakehous planet movel and strait is movement through the heavens, so as to know the place among the stars which it occupied day after day. At last he reit so confident that this planet could now be detected by the telescope that on the 18th of September, 1846, a day from henceforward to be memorable in the annals of astronomy, lee Verrier worst to Dr. Galle, astronomer at the Berlin observatory, requesting him to direct his released to be confident that this planet could now be detected by the telescope showed him. He was fostunated which I have not seen, and which no human eye has ever seen, but which nevertheless, must lie in that soot, because my calculations have pointed out the necessity for its existence."

It may sound almost like a romance when we are told that this assonishing prediction was literaily fulfilled. On the very evening o

and thus its true character was illustrated in another way.

The scientific world stood amazed at this astonishing discovery. In any case, to have solded yet another magnificent planet to the sun's retinue would have been a lotable achievement. But the circumstances under which this planet was brought to light made the incident mark an epoch in the history of the human intellect. Here was a superbulance, eighty times larger than the earth, discovered not by a mere accidental survey, but in consequence of refined mathematical anticipations, which illustrated in the most emphatic manner the truth of the law of universal gravitation. The name of Le Verrier was immediately elevated to a pinnacle of renowningher than that attained by any mathematical astronomer since the days of Newton.

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gravitation. The hame of Le verrier was immediately elevated to a plunacie of renown higher than that attained by any mathematical astronomer since the days of Newton.

It presently appeared, however, that the fame of the discovery of Neptune was not to be solely the property of Le verrier, but that it would have to be shared with a young English mathematician, J. C. Adams, who had recently taken an exceptionally brilliant degree at Cambridge, and had also, as we have said, discovered the planet by calculation ere it had ever been telescopically seen.

Adams had also, like Le Verrier, provided instructions for the practical astronomer by which the telescopic search for the planet night be undertaken. Prof. Chailis of Cambridge commenced to search for the planet in accordance with the calculations of Adams, but he was unfortunately not provided with that special appliance for facilitating such a research which was available to Dr. calle at Herlin. The Cambridge observer had not yet received a copy of that star chart without which the task of discriminating the planet from among the hundreds of adjacent stars involved an arduous and tedious piece of work. Prof. Challis did. however, manfully undertake the laborious duty of instituting a careful survey of the region. We now snow that in the course of his work he had, on more than one occasion, unwittingly observed the planet. Neptune, so that there cannot be the least doubt that the process which he was pursuing must necessarily in due time have resulted in complete success. But while Challs was engaged in this laborious work news reached ambridge of the discovery of the planet. A considerable controversy thereupon ensued. The French nation claimed for Le Verrier the randition of the planet and in consequence of that work, and solely in consequence of that werk, and solely in consequence of the termine to deep to Adams any share whatever in the immortal achievement. They wriged that Le Verrier, quite unconscious of the labors of Adams, had completed and compared t chains evation at Cambridg. The English claim demanded that the fame of the discovery of Neptune by mathematical research should be shaved between Le Verrier and Adams. Gradually this claim has come to be almost universally recognized as a just one. It is true that certain French writers accasionally speak of the discovery of Neptune as simply due to Le Verrier, but impartial judges generally re-

fer to it as the result of the concurrent labors of the French and the English astronomers.

There can be no doubt that even if Le Verrier or Adams had never lived Neptune would in the course of the last fifty years have been discovered in some other way. We frequently read in the papers announcements of the detection of an additional planetary member of our system, but no one attaches to such achievements more than a very small fraction of the significance that must ever be attached to the discovery of Neptune. These small planets are usually discovered by dillasent comparison of the stars in the sky with the stars on the chart, and whenever a new object is thus brought under notice it is carefully looked after. There can be no doubt that Neptune would in course of time have been found by this simple survey work, and though its detection would have been a great reward to the diligent astronomer who was so fortunate as to have first dropped upon it, yet it would have been a matter of much regret had Neptune been thus picked up, instead of having been the object of that wonderful mathematical triumph by which indications were given of the exact spot in which the search was to be made. Indeed, as a matter of fact, Neptune had once been very nearly discovered in what may be described as an accidental manner before either Adams or Le Verrier were born.

Astronomer Laiande records in his great celestial catalogue a certain "star" in a certain place on May 10, 1756. Subsequent inquiries instituted by Adams showed that this object was not a star as Laiande thought, but that it was really the planet Neptune. A reference to the original manuscript observations of Lalande brought circumstances of much interest to light. It appears that the astronomer had observed this object on May 8 as well as on the date two days later, but as his observations showed a different needition on the 10th from that which he had set down on the 8th, Lalande dream that a superd dicovery bad lain so nearly in his grasp, but we cannot regret th

A PICNIC STUDY IN BLACK.

West Twenty-third Street Interested by a Procession and Its Fare.

Apparently it was a Sunday-school picnie o the A. M. E. persuasion. It reached across West Twenty-third street yesterday morning to the inspiring music of its own band and created not a little diversion. Every individual in the procession was colored, even to the music ans. and the great majority were very young and quite excessively spick and span; more so, indeed than any but very young persons could have been on such a day as yesterday. At the head of the parade marched the master of ceremo-



No more imposing spectacle than that maste of ceremonies has been seen in the streets of New York for many a moon. Two policemen acted as special escort to him. Pride was in his demeanor; consciousness of his own exalted position showed itself in every line of his face and his step was timed to the rhythm of "See the conquering hero comes." From time to time applause greeted his grandeur, but he looked neither to the one side nor the other, but preserved the rigidity of his dignity without wavering.

Back of him marched many small colored children beaded by a man who was obviously of minor importance compared with the master of



MATERIAL FOR A BARBECUE.

ceremonies. The children wore very clean cothes, and kept time to the music with quita preposterous accuracy. At each step they thrust their legs straight forward, and then banged their feet down upon the ground in exact accord with the beat of the time.

Haif way down the line marched a middle-ared colored woman with a big basket on her arm. There was something in that basket which caused her no little anglety and the children about her agreat deal of interest, in the course of the march the contents of the hasket said "Cluck!" frequently, and once or twice squawked with great vigor.

"What you got there, mammy?" called out a bystander.

"What you got there, maining," bystander.
"Pat's my conterbution to de picnic," said she with considerable dignity. "No lady ever goes to a picnic without bringin' a conterbution. Dat's for a barbecue, dat is, an' it's laid its last egg."
"Curruch-a-doodle-doo!" remarked the co



THE WATERMELON. tents of the basket with great emphasis at this incture.

"My sakes!" exclaimed the proprietor: "dey tol" me it was a hain!"

After the meat course came the dessert. This was a huge watermelon in the arms of a patriarchal darky surrounded by youngsters with perspiring mouths.

The aged one was the picture of good humor and pleasant anticipation. As there were about



A TEACHER. fifty youngsters in the picnic and no other watermelon in sight, there seemed reason to believe that some of those mouths would water in vain. Meantime they all grinned.

At the foot of West Twenty-third street the picnic boarded an excursion boat, and with the band playing and cheers floating over the superheated air put off late the stream.

THE LARGEST DIAMOND, and buy the diamonds at first hands purely upon their own judgment.

BERE IS A PICTURE OF IT, JUST THE SIZE OF THE STONE.

t Isn't the Sort That Ladles Love to Wear, but Is the Mardest Substance Known and Will Be Worth 285,000 When Breaken Up Iste Little Cutting Stoney.
THE SUN presents herewith a picture of the biggest diamond ever found. The picture is reproduced the natural size of the big stone, from photograph recently sent to this country from Paris, where the dismond was sent to be sold.

The accuracy of the picture is vouched for by Senjamin M. Levy, a diamond buyer and dealer of 68 Nassau street, who was the first American to see the wonderful stone, and perhaps the only American who has seen it.

Mr. Levy saw and handled it in the wilds of South America, within a few miles of where it was found, and he tells an interesting story of his efforts to buy the diamond. He offered \$17,500 for it, and the miner who found it wanted \$50,000. Broken into fragments it is estimated to be worth for mechanical purposes about \$60,000. If the great stone were of the crystailine variety which we know as gems, which are known in the trade as diamonds, and of a good color water, there would be no knowing what value it might have. It is seventeen

upon their own judgment.

Many a gem found its way out of the mines in a mysterious way, and diamond buyers were always at hand to purchase these as well as the ones in the hands of the miners, although it meant death to be caught.

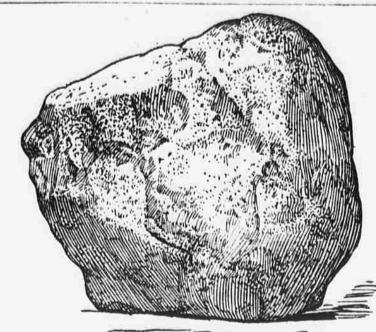
He began buying diamonds sixteen years ago, and he says that since that time he has made one wip a year to South Africa and five trips altogether to South America. It was during the trip which he made into the Bahla region, a year ago, that he saw the great carbon shown in

together to South America. It was during the trip which he made into the Bahia region, a year ago, that he saw the great carbon shown in the picture.

Going into the Hahia diamond region to buy carbons, Mr. Levy says, is by no means a pleasant job. The diamond buyer not only has to take all the risks from venomous insects, and wild animals, box constrictors, and crocediles, which the usual traveller does, but he must also risk being murdered and robbed, for he must go provided to buy with ready money.

"I take my whiskey from the United States," he said; "my money in coin, and a good revolver and a magazine rife, and start from Bahis with two men in a dugout cance. In three days we reach Canuavelras, where I put my money into the hands of a merchant who is well known to the miners, and from him I get a letter which tells the miners what amount I would be good for in making nurenases. That is how you have to be fixed if you want to buy diamonds. The first question the miner sake is: "You want to buy? How much money have you got?"

"From Canuavelras we go to Jacreandor, and there we take mules to the diggings. When I first went in there, thirteen years ago, there were but fifty men at work. Now there are about 300. They find the carbon under about four feet of ground, in gravel. Sometimes it is stuck fast to blis of the other stones as if it had been embedded in rock once, and some pleces



THE BIG CARBON

times as big as the Victoria diamond, the largest of modern finds, and that stone sold for \$1,500,000; but it is of the amorphous variety of diamond known in the trade as carbon, and its value is due purely to the use to which it could be put, when broken into small fragments, for furnishing cutting points for rock drills, saws for cutting rock or other refractory materials and for facing tools for turning hardened steel, emery wheels, and such hard things.

The uncrystallized black diamond is found only in the Babia region of South America, and it is the hardest substance yet discovered upon the earth. Its powder will cut the crystallized diamond almost as easily as diamonds will cut the ruby, sapphire, and emerald.

The gem which we call the diamond has been known for many ages, but until the discovery of the diamond fields of South Africa the stones were comparatively rare in the world. One day in 1867 some one picked up a pebble in the Orange River near Hopetown, which proved to be a diamond. Then in 1869 the diamond known as the Star of the South was found. It wells and sold the big carbon to a merifiant there. I wells so that time the mines in the blue ground country at and about Kimberley have been opened and the South Africa diggings now supply 188 percent of all the diamonds of the world. One day in the provided with the south Africa diggings now supply 188 percent of all the diamond of the world. One day in the provided of the world diamond buyer one of a class of sharp, able, and active business is to go wherever diamond are found, provided with ready cash.

Gastronomic Notes.

GASTRONOMIC NOIES.

As commercial caterers, the English have at-

tained within certain limits to the highest excellence. This is an outcome of the incessant eagerness of the Briton to engage in some sort of outdoor function in which eating occupies a onspicuous place. Whether for boating parties on the Thames, the races, or games of any kind, the inevitale hamper of provisons is an essential part of the equipment. Facility and certainty of transportation mane London the centre of alimentary supply for such occasions. Years of experience and practice have taught English caterers a system, which for compactness and completeness has attained absolute perfection. One London establishment provides a luncheon hamper, from which are evolved a table, the comestibles and table furnishings to be placed upon it. This package may be opened. and in less than five minutes the table is set up. dressed with linen and a service of silver, china and cutlery. The estables, which are included in the hamper, consist of bouf braice, of which six tons are sold weekly by one caterer; mayonnaise of salmon, chaudfrold de fole-gras aspic of ortolans, perdresux à la gelée, &c., according to the price paid, which does not exceed \$1 a head, all of the accessories included. This package is delivered free of charge within a reasonable distance of London. Another firm of caterers likewise provide ham-pers for boating and pionic parties; but they do not include a table as an adjunct. Their hampers contain linen, china, and plate, pigeon ples, ox tongue, pressed beef salads, bread and butter, and cheese, all of which are furnished at a cost of 80 cents a head. This firm not only feeds its patrons, but also owns steam launches and house boats for use on the Thames, which may be engaged at a moment's notice, equipped for occupancy for any length of ime. The firm's agents call every day for orders, and all that the lessees need consider is the enforment of the moment; every complication of housekeeping being climinated by the payment of a fixed sum.

English middle-class gastronomy possesses

A French journal has recently opened a dis cussion in relation to the association of the names of certain distinguished persons with celebrated culinary concections. In most cases the individuals so honored are as far removed from any knowledge, or, perhaps, appreciation of cookery as is the clusive eel from a paratytic. There are, however, some notable exceptions. Mme, de Pompadour lost an opportunity when she named a famous preparation of her creation filets de volaille à la Bellevue. Louis XVIII. was equally remiss in calling his noted soup was equally remiss in calling his noted soup à la Xavier. Cardinal Richelieu, the originator of probably the greatest gastronomic success of the age, mayonnaise sauce, took his fame as a state: man seriously at the expense of that of a culinary genius. The Marquis de Réchamel had a finer appreciation of the enduring recognition accorded an appeal to the gluttonous institucts of man. He called his white sauce a la Réchamel, and so it will be known probably for all time as inseparably connected with his name. The Prince de Conté, who ininvented potage à la Condé was equally wise. In this country it is noticeable that certain dishes served at famous restaurants undergo frequent changes of name. The menus of some

middle-class household management is the best in the world. He asserts that the popular belief in its excellence is not warranted by the facts that there is nothing less varied, less agreeable, and less tempting than the food consumed in those households. They keep, he says, but one servant, who buys all the supplies, which are invariably the cheapest and poorest in quality and are insufficient in quantity. Sorrel and watercress, varied by wet, uncatable potatoes or vilely cooked cauliflower, consultate the vege-table diet throughout almost the entire year, and only one is served on a single occasion. The cheese used is putrid, and comes to the table twice a day until consumed. As for the famed pot-au-feu, it is nothing more than hot water in which cabbages are boiled. The only meat used is that which has previously done duty in making a stronger decoction of liquid called soup. Of game they know no other than an animal they call a rabbit, whose aspect is hideous without any mitigating palatable accessory to improve its flavor. The sauces are flaced brown flquids, and the withered salad is economically dreased with oil. He claims that the cheapest London lodging house never furnishes worse omelettes nor more suspicious fish. In refutation of this gloomy picture there is the testimony of the late Philip Gilbert Hamerton, who married a French woman and resided either in Paris or the provinces of France, where he maintained a household equivalent to that of the well-to-de bourgeois. He reveals quite a different state of affairs from that painted by the writer in the St. James's Gazette. Mr. Hamerton, in an article contributed some years ago to an English magazine devoted exclusively to this subject, demonstrated conclusively that cookery in the average bourgeous household is the best in the English middle-class gastronomy possesses a veneer of vulgarity that has reduced the cusine of that nation to a level lower than that of any other. Some of the culinary journals of England reflect this spirit in their comments upon technical topics which they discuss. An instance in point is found in the creation of the word "brunch" to describe a new meal which has recently come into favor in England. The journal that gives information on this subject says that it is now quite the correct thing to use the phrase, "Will you brunch with me?" that is, take part in a repast which is described as combining the quantities of break fast and uncheon. It is designed for the convenience of those persons who are always too late for the first and too early for the last, and is the outcome of the last, which are now so much in vogue in England.

A French journal has recently opened a dis-

The present is an unusually early and favor. able season for mushrooms. In some localities after rain old pastures are actually white with after rain old pastures are actually white with them. While these fungi which grow in the fields are of higher flavor than those cultivated in caves in France, the latter lend themselves more readily to cultinary treatment on account of great firmness of texture. Mushrooms should be gathered in the early morning, when they are in the button stage, before they have assumed the umbrella form. Flabby, leathery, expanded, black-lined specimens should never be used.

The German press has recently been much exercised over the revelations made at a meciing of the Congress of Hamburg brewers and innkeepers by Herr Lindenburg, a publican of innkeepers by Herr Limienburg, a publican of Dessau. He informed his colleagues that the local clergy of that fown had established a "Bier-schanke" in one of the churches, where beer could be had on tap on Sundays and week days. While in the Duchy of Anhalt the licensed inukesper is prohibited from seiling beer siter 10 P. M., the parsons are allowed to sell it until midnight. Church attendance in Dessau, in consequence of the opening of this "Bierschanke," has largely increased.

HARA-KIRI IN JAPAN.

The Sale Occasion Upon Which Foreigner Have Seen the Horrible Act Done.

From the Springfield Republican. The Japanese samural, from earliest childhood, was trained in the most elaborate code of honor of mind ever devised, and which to him represented the law. Common prople might be punished for infractions against property or person; for the samurat there was but one termination for a stain upon his escutcheon or that of his clan; self-immolation by hara-kirl, as the act was termed; seppuku, as the ceremony of disembowelling was styled. "We cannot survive our defeat," said the confidendial adviser to Keiki Tokugawa, the last shogun when they had retired to the castle of Osaka, after the disastrous battle of Fushimi, and he

when they had retired to the castle of Osaka, after the disastrous battle of Fushimi, and he advised seppuku. But Keiki did not see it, and survives to-day in his castle at Shizuoka, although the man who proposed the suicide, true to his principles, carried out his intention. A samural, to-day, cannot be put to death as a common oriminal, if he should fail to despatch himself, he must first be reduced to the class of heimin, common people, after which the law map take its course.

When the first deliberative assembly of united Japan met in 1869 one of its members. Ono Selgoro, proposed to abolish the custom. Out of a total of 200 there were 200 votes recorded against this innovation, and the debate demonstrated the popularity of this institution. It was designated as "the very shrine of the Japanese national spirit, and the embodiment in practice of devotion to principle"—"a great ornament to the empire"—"a pillar of the constitution"—"a valuable instrument tending to the honor of the nobles, and based on a compassionate feeling toward the official caste, a pillar of religion sand a spur to virtue, &c. It was remarkable, to say the least, that Ono Seigaro, the proposer, was shortly afterward found murdered, and that no clue to the assassin was found. Salgo Takamort, who led the dangerous Satsuma rebellion in 1875, with many of his principal followers, chose this method of vindicating a lost cause. And it was rumored openly, although the Government suppressed the publication, that a number of army and navy officers committed hara-kiri only a veer ago, when the retrocession of the Lagitung peninsula had been confirmed.

Although no longer a recognized institution, there is little doubt it is occasionally resorted to, even while being discountenanced by the enlightened members of the Government. But it is safe to predict that this method of suicide will continue to exist as long as the Yamato Damashii illterally spirit of Old Japan is guarded by the samurar, although it will be concealed from foreign observers, wh

concealed from foreign observers, who have but little sympathy with this mede of evincing contrition or of making reparation.

The act of hara-kirl was witnessed only once, so far as records go, by foreigners. It was in February, 18d8. The port of Higgo (Kobé) had been opened to foreigners, when a party of Higgen troops passed through on their way to Kloto. One of the Cautains, Taki Zenzaburo, gave orders to fire on the foreigners, and although very little damage was done, the activas so wanton and unprovoked that prompt and proportionate punishment of the offenier was demanded, so that these promiscious attacks upon peaceable foreigners might cease. The Givernment assented and Taki was ordered to commit seppuku by the Emperor's commandand that there might be no mistake, representatives of the foreign powers were invited to be present at the sickening drama.

The time was set at 10:30 P. M., the place, the honder or main hall of the Selfakuil temple of Higgo. Ito Shunske, now his Excellency Marquis Ito Hirobunni, Fremier of the Cabinet, but then Provisional Governor of Higgo, had been ordered to witness the punishment on the part of the Government. Altogether there were seven kenshi, or witnesses, probably to correspond in number with the foreigners detailed to witness the act.

The general opinion prevails that the man

bave spongy places where bits of clear pebble seem to have been forced into the carbon, One's guide is supposed to know where all the mines when places the buyer as a man with no end of money.

"I was as mong the mines when I met an old guide of mine, Pedro Gonzales, coming our, bound for halla with the big carbon which bed dust been found. He showed it to me, and I tell you I was astonished. It was a solid piece of carbon to be done to mine the place of carbon in the spongy place on its surface, "I offered him £3,000 for it.

"I offered him £3,000 for it.

"I offered him £3,000 for it.

"I infered him £3,000 for

If a daimle (feudal lord) were guilty of con-apiracy or rebellion, seppuku was the only means to avert confiscation and loss of honor. If a samural were guilty of a crime he was con-demned to hars-kiri, and his clan might be pun-ished unless he forestalled his doom by the ulti-mate ceremony.

If a samural were guilty of a crime he was condemned to bara-kirl, and his clan might be punished unless he forestalled his doom by the ultimate ceremony.

If a samural had been condemned, he was delivered to one of the feudal lords, who had been previously requested to see that the execution should take place with due decorum. Two tatami, thick mats about eight by four feet, bound with white slik, were placed in the garden, one lengthwise and the other at right angles, in the form of a hammer. They were then covered with white slik, six feet long and four feet broad, while bamboo poles were stuck in the ground, also wrapped in white slik, from which curtains would be hung, so as to screen the condemned man from uninvited eyes. In front of the mats was a bamboo poral, framed somewhat after the entrance to a temple. The whole was surrounded by a pleket fence, in which two openings had been left. This fence was thirty-six feet square.

The condemned man entered by the opening at the north, called umban mon, or "door of the warm basis," and after bowing scated himself upon the mat placed crosswise and facing north. There were usually three kaishaku (seconds) who entered by the entrance on the practice of virtue." The first of these kaishaku trouched at the culprit's left hand, prepared to decapitate the man who had called upon him for this last act of kindness. And it shows the nerve of the Japanese that in almost every case this man was bound by ties of kindred or friend, ship to him who was about to die. The duty of the second kaishaku was less ominous; he had to bring the tray with the dirk to be used in the dreadful act. The third kaishaku was to pick up the head after it had been severed from the body, and to show it to the officials representing the tray with the dirk to be used in the dreadful act. The third kaishaku was to pick up the lead after it had been severed from the body, and to show it to the officials representing the covernment for identification.

Hrought up to look with calmness upon a possibi

EFFECTIVE MATCHMAKING.

The Simple and Direct Method Employed by the Nez Perces Indians. From the Morning Oreginian.

The simple and Breet Method Employed by the Nex Perces Indians and their visitors during the relevant too not the last Fourth of July. The markers of the local tribe are very wealthy people, and there are designing mothers among the above the local tribe are very wealthy people, and there are designing mothers among the above the local tribe are very wealthy people, and there are designing mothers among the above the local tribe are very wealthy people, and there are designing mothers among the above the local tribe are recarded somewhat like the school of realty in fractinonial closes. The single are recarded somewhat like the school of realty in fractinonial closes. The maidens from all visiting tribes were brought to Lapwat to find hershables. The company of the tribes, which were revised for the condition.

The marriageable modden were too share their annuties, their homesteads, and the accord quartered in a selected spal in the valley of the Lapwal. At an appeared in process for maintreast was a substantially was midnight, and the scene was in agreed for trees made fragrant by the wild flowers, and was carried a white wild was made and their cames. The design of the solid saving flowers lies of the was allowed the tents they charted an indian chorus that was delegal as they approached the tents they charted as they approached the tents they charted and indian chorus that was delegal as the wall of a contract of the wall of the contract of th

"THE SWEET BYE AND BYE."

ITS ORIGIN AND FIRST PUBLICA-

TION BY MEY WHO SCORNED IT. Physician Wente the Verses, and a De-

spondent Musician Worked Out the Tune, All Within Forty Minutes-The Piece Accepted by the Publisher Out of Pity, There recently appeared in a Western newspaper an article regarding "The Sweet Bye and Bye," containing many absurd statements. Now the interest in this song is awakened, I wish to make public the circumstances of its inception and subsequent publication and the

A. P. Webster, the composer of the music,

way in which it became popular.

was by no means unknown to the public at the time the song was published. He had won gross popularity with his "Lorens," "Paul Vane," Little Mand." These had been published at Chicago by H. M. Higgins, who, with the writer, then a boy of twelve years, created a sale for them by singing them for acquaintances and customers who came to purchase music. At that time, in the early sixtles, Webster lived at the little town of Elkhorn, Wis., and about twice each year he would come to Chicago with a roll of manuscript songs. These were usually written with a pencil, and in a hasty, scrawling manner, though the notes were always legible. The songs he offered for sale at \$25 each, and the publisher would select what he thought would sell, and either pay him or agree to pay royalty. My recollection is that "Paul Vane," and "Little Maud" were published on the royalty plan. Webster's appearance as he came into the store was most uncommon. He wore his hair hanging to the shoulders. It was light brown, and his complexion was forid. He had clear blue eyes and heavy eyelashes. He was of medium height, rather slender, and walked with a gait that suggested humility. It has been said that Webster was intemperate, and that he used to drink heavily, but I never saw him under the influence of liquor.
In 1800 or 1807 a young physician, Samuel

Fillmore Bennett, then lately graduated from Ann Arbor University, had become an intimate friend of Webster. They were in fact almost inseparable. One day Webster came into his office in a most despendent frame of mind.

"What is the trouble new?" his friend asked. "It is no matter," Webster answered with a sigh "It will be all right bye and bye." Like an inspiration the idea flashed upon

Reppett, who had written several war poems, to write some verses, and he said: "Why not make a song of the sweet bye and Webster answered: "You write the verses and I'll make the

music." Turning to his desk Bennett hastily scribbled

line after line, and in less than a half hour the erses were completed. He then handed them to Webster, who raised his violin just as two riends entered. Not waiting to greet them he drew his bow and without any hesitation played the tune which since has been sung by millions. He hastily jotted it down on waste paper, and in less than ten minutes from the time he began the composition the four men were singing "The Sweet Bye and Bye." Thus originated the words and music of a hymn which has given consolation and hope to the whole Christian world. The characters in the drama are few and numble, the surroundings most simplethe poor despondent musician, the young physician, two friends, and a common office in a

Western town.
The composer, with his manuscript songs under his arm, appeared in Chicago soon after-ward. He hoped and expected to sell the manuscripts for \$25 each; this meant \$150 or \$200 to take home. He went to the music store of Root & Cady, who had made a fortune with "The Battle Cry of Freedom" and other war songs. They examined his manuscripts and took all except "The Sweet Bye and Bye." That they "did not think worth publishing."

Poor Webster! The song he had counted upon

Poor Webster! The song he had counted upon most was rejected! He could not go to Higgins again, for Higgins had hurt his feelings and had refused to publish any more of his songs. He finally thought of a new firm of young men lately from Boston, Lyon & Healy. They had treated him courteously, though they had published nothing of his. Thus he came to Lyon & Healy's store, where I was then in charge of the retail department. Having known him for several years, I greated him warmly, and at once took him out to Mr. Healy, who gave him his immediate attention. I remember so well the whole attitude of the man as he came in and approached Mr. Healy, He awakened a keen sense of pity, for he was as if he had lost all hope; and I think it was this feeling which moved Mr. Healy, after listening to the song on the plano, to offer him \$20 for it. This Webster accepted, and seemed thankful for. Little interest was shown toward the song. Webster's popularity had waned greatly and had been overslandowed by the enormons success of George F. Root's war songs. Thus the composer of "Little Maud" attention given him. After Webster had gone Mr. Healy turned the manuscript of the song over to me, and I played it and hummed it with perfect indifference, not to say contempt, for its simplicity offended the little knowledge I had

songs. Thus the composer of "Little Mand" and "Lorena" was no longer sought and little attention given him. After Webster had gone Mr. Healy turned the manuscript of the song over to me, and I played it and hummed it with perfect indifference, not to say contempt, for its simplicity offended the little knowledge I had acquired by studying Johnson's "Harmony and Thorough Bass." Mr. Healy said with a sight. "On, yes! we'll have to get it out," and then added, "Poor fellow! I didn't have the hears to send him away without taking it."

So we got the song out with the least expense possible, the cheapest little page we could get made, and the lettering so bad that we all felt schamed to show it. I placed it upon the counter, and there it was permitted to lie friendless, for I never recommended it, feeling its poverty for I never recommended it, feeling its poverty and insignificance in comparison with the gorgous lithograph title pages and eleganity colored lettering of the other sheet music by which it was surrounded. Finally, without the sale of a dozen copies, it was consigned to the wholesaie shelves, where Mr. Healy and myself mentally erected a tombstone inscribed "Sacred to the memory of a poor musician." About a year passed, when a Mr. Whittemore, a music teacher in the public schools of Chicago, came in and asked me if I thought Mr. Healy would let him use "The Sweet Hye and Bye" in a Sunday school book he was then compiling. I said: "Certainly, without doubt, for the song is of no uses to us. It has no sale whatever."

He went out to the office and presently Mr. Healy called to me to give Mr. Whittemore a copy of the song. Nothing more was thoughts of the matter until nearly a year afterward, when we began to have calls for "The Sweet Hye and Hye." I remember my surprise the first time it was asked for. A little schoolgri, not more than 1? or 15 years old, came in very timilay, evidently unused to trading "by herself," and, standing off from the counter as little for the sound results and railway trains wi